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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/896,432	06/29/2001	Edward Paul Cernocky	SOC-105	8240

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EXAMINER

GREENE, DANIEL LAWSON

ART UNIT	PAPER NUMBER
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3641

DATE MAILED: 01/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/896,432

Applicant(s)

CERNOCKY ET AL.

Examiner

Daniel L Greene Jr.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Reopened Examination

1. Applicant's request for reconsideration of the finality of the rejection of the Office action dated 10/08/2003 is persuasive and, therefore, the finality of that action is withdrawn.

2. Upon further consideration of applicants arguments within the Substitute Appellant's Brief filed 11/22/2004 the following rejections have been withdrawn:

35 U.S.C. 103(a) over Babour in view of Guerreri,

35 U.S.C. 103(a) over Guerreri in view of Neyer,

35 U.S.C. 103(a) over Babour in view of Abouav, and further in view of Guerreri,

35 U.S.C. 103(a) over Babour in view of Abouav, and further in view of Guerreri in further in view of Neyer.

However, upon further review, new grounds of rejection have been found and an office action on the merits of the instant application follows.

3. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the previously cited references Snider in view of Guerreri.

4. In regards to claim 1 Snider discloses a detonation device (10) for selectively perforating a tubular (12) with a designated explosive charge (22) located down hole in a well bore (2), said device comprising;

the tubular (12);

the designated explosive charge (22) attached (page 9 lines 6-12) to the tubular (12); and a receiver (page 11, lines 14-15); whereby a transmitted signal detonates the respective explosive charge and thereby perforating the tubular .

In Figures 1 and 3 and page 8 lines 20-28, page 9 lines 6-12, 23-28, page 11 lines 14-15, and 19-21 and claims 39, 40, 42, 43 and 51

However, Snider does not expressly illustrate a wireless receiver, microprocessor and control means connected to said wireless receiver, an explosive bridge wire, high voltage supply means, and energy storage and trigger means, whereby a coded signal received by said wireless receiver is decoded by the micro processor and, if the code designates that the respective explosive charge is to be detonated, sends a signal to the trigger means which will supply high voltage to explosive bridge wire which will create sufficient energy to initiate detonation of the respective explosive charge.

Guerreri teaches a detonation device (10) for detonating an explosive charge comprising of a command unit (11), a translator unit (12), a control unit (13), which is comprised of a wireless receiver (61), a microprocessor and control means (62), a firing mechanism (63), which is comprised of an electric blasting cap (104) with an explosive bridge wire and an energy storage and triggering means (110), in figures 1-3 and 5 and

column 3 lines 1-8, lines 11-26, and lines 30-51, column 4 lines 3-10 and lines 15-29, column 6 lines 57-68, and column 7 lines 1-14 and line 26.

Guerreri and Snider are analogous art because they both deal with detonation of remote explosive charges.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Guerreri's apparatus in order to achieve the benefits of a wireless system (i.e. no cost for wires, no management of wires, portability, etc.) as well as the desired effect of producing a blasting system, which is comprised of a plurality of detonator assemblies that are individually detonated by a wireless remote command source. It is noted that Snider discloses any suitable control system may be used to ignite the explosive charges including electromagnetic wave transmissions (i.e. wireless).

5. In regards to claims 2-4, Guerreri clearly illustrates a coded wireless signal that allows selective detonation of a plurality of explosive charges individually, in sequence, and in any desired pattern in figures 2, 3, 4, and 4a and column 3 lines 45-51, column 4 lines 30-66, column 5 lines 1-41 and lines 50-64, column 6 lines 5-9, lines 12-24, and lines 40-56.

6. In regards to claim 5, Guerreri clearly illustrates that the coded wireless signal does not transmit the power that is required to detonate the explosive charges, as identified in the rejections of corresponding parts of claims 2-4 above.

7. In regards to claim 7, Guerreri clearly illustrates that said microprocessor includes a digital signal processing logic, as identified in the rejections of corresponding parts of claims 2-4 above.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snider in view of Guerreri and further in view of Neyer.

Snider as modified above by Guerreri discloses the claimed invention in figure 5 and column 6 lines 64-68 and column 7 lines 1-14, that the means for explosive charge (14) is comprised of a shape charge with a solid explosive (101), which is initiated by an electric blasting cap (104). The electric blasting cap, which comprises an explosive bridge wire, is initiated with the application of an electric current, which is applied via a capacitor discharge-blasting machine (110) and initiating switch (105), to the explosive bridge wire. Guerreri does not illustrate that the explosive bridge wire is composed of an electrical circuit that is formed on a circuit board with an aperture and a portion of the electrical circuit overlying the aperture.

Neyer teaches in figures 2 and 3 and column 2 lines 38-46 and lines 65-69 and column 3 lines 1-3, lines 11-18, and lines 23-37, that a chip slapper (40) that is composed of a ceramic substrate (20) and contains a coating of a metal film, which is etched into the shape of spaced conductive lands (14) and (16) and bridge member (42), and is deposited with a flyer layer (20) of dielectric coating. The bridge member is a curved shape, typically a circle, and includes a cavity (44). When a current is applied to the chip slapper, via the conductive lands, the bridge member is vaporized and produces a circular shaped flying plate (48). The circular shaped flying plate is

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produced by the cavity, which results in a shock wave focused to a higher pressure, due to the flying plate's ability of sticking to the substrate. The flying plate's ability to sticking to the substrate is due to the decrease in plasma driving the inner surface of the bridge member.

Snider and Neyer are analogous art because they both deal with the detonation of explosives.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Neyer's improved shaped bridge slapper in order to achieve a larger shock wave to detonate an explosive, by using less energy than is required for a conventional bridge slapper, as such is no more in than the use of common explosive bridge wire configurations known in the art.

9. NOTE: Applicant has argued that the invention of claim 6 detonates a charge by vaporization of the bridge, not the slapper mechanism of Neyer. This argument is not persuasive and the office would like to point out that Neyer clearly discloses the limitations presented by applicant. It is the vaporization of the bridge in Neyer that causes the detonation of the charge, regardless of the interim slapper mechanism.

10. Note also that statements as to possible future acts or to what the flash vaporization of the bridge causes is essentially a method limitation or statement of intended or desired use and do not serve to patentable distinguish the claimed structure over that of the reference. See In re Pearson, 181 USPQ; In re Yanush, 177 USPQ

705; *In re Finsterwalder*, 168 USPQ 530; *In re Casey*, 152 USPQ 235; *In re Otto*, 136 USPQ 458; *Ex parte Masham*, 2 USPQ 2nd 1647.

See MPEP 2114, which states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647

Claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than functions. *In re Danly*, 120 USPQ 528, 531

Apparatus claims cover what a device is, not what a device does. *Hewlett-Packard Co. v Bausch & Lomb Inc.*, 15 USPQ2d 1525, 1528

As set forth in MPEP 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

Claims 8-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snider in view of Abouav, and further in view of Guerreri.

11. In regards to claim 8, Snider discloses a method for selectively perforating a tubular with a designated explosive charge located down hole in a well bore in claims 1 and 40:

1. *A process for establishing fluid communication comprising:
positioning (including connecting/attaching(see claim 40)) at least one explosive charge in a subterranean well bore such that said at least one explosive charge is placed external to casing which is also positioned within said well bore and is aimed toward said casing; and
detonating said at least one explosive charge so as to perforate the wall of said casing at least once.*

Although Snider discloses "Other suitable control system for igniting the explosive charge(s)...such as electromagnetic...and corresponding receivers (not

illustrated)...for wave transmissions" (See page 9), Snider does not expressly illustrate a detonating explosive charge having a wireless receiver, a microprocessor and control means connected to the wireless receiver, at least one explosive bridge wire, a high voltage supply means, an energy storage, a trigger means, and a method of transmitting a coded signal to an individual detonator assembly, in order to activate an individual detonator assembly among a plurality of detonator assemblies.

Abouav teaches in figure 1 and column 5 lines 45-56 and lines 62-68, that a quarry face (2) contains a number of well bores (4), which contain detonator assemblies (6) located in each well bore. The detonator assemblies are connected by conductors (10) to an antenna (11) for a radio transceiver (12) located in one or more of the assemblies. The radio transceiver receives control signals from a controller (14) via a transceiver (15) so that the detonator assemblies can be actuated by a wireless remote control. The detonator assemblies are synchronized to be activated at an establish time, after the controller has transmitted the signals for the blast to commence.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Abouav's method of activating the detonator assemblies in order to achieve the desired effect of activating the detonator assemblies in a precisely defined time sequence so that efficient use is made of the blasting materials, as such is no more in the use of common techniques and methods known in the art.

Guerreri teaches, in the corresponding rejection of claim 1 above, a method of activating an individual detonator assembly among a plurality of detonator assemblies.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Guerreri's apparatus in order to achieve the benefits of a wireless system (i.e. no cost for wires, no management of wires, portability, etc.) as well as to achieve the desired effect of producing a blasting system, which is comprised of a plurality of detonator assemblies that are individually detonated by a wireless remote command source. It is noted again, that Snider clearly discloses any suitable control system may be used to ignite the explosive charges including electromagnetic wave transmissions (i.e. wireless).

12. In regards to claims 9-11, see rejections of corresponding parts of claims 2-4 above.

13. In regards to claim 12, see rejections of corresponding parts of claim 5 above.

14. In regards to claim 14, see rejections of corresponding parts of claim 7 above.

15. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snider in view of Abouav, further in view of Guerreri as applied to claim 8 above, and further in view of Neyer.

Snider in view of Abouav, and further in view of Guerreri discloses the claimed method above, but does not illustrate an electrical circuit, which is formed on a circuit board that contains an aperture, overlying the aperture in order to form an explosive bridge wire, that when energized by an application of power, will flash vaporize causing detonation of a nearby explosive charge.

Neyer teaches, in the corresponding rejection of claim 6 above, an electrical circuit that overlies an aperture of a circuit board in order to form an explosive bridge wire.

Snider and Neyer are analogous art because they both deal with detonating explosives.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Neyer's improved shaped bridge slapper in order to achieve a larger shock wave to detonate an explosive, by using less energy than is required for a conventional bridge slapper as such is no more in than the use of common explosive bridge wire configurations known in the art.

16. NOTE: It is the vaporization of the bridge in Neyer that causes the detonation of the charge, regardless of the interim slapper mechanism.

17. Note also that statements as to possible future acts or to what the flash vaporization of the bridge causes is essentially a method limitation or statement of intended or desired use and do not serve to patentably distinguish the claimed structure over that of the reference. See *In re Pearson*, 181 USPQ; *In re Yanush*, 177 USPQ 705; *In re Finsterwalder*, 168 USPQ 530; *In re Casey*, 152 USPQ 235; *In re Otto*, 136 USPQ 458; *Ex parte Masham*, 2 USPQ 2nd 1647.

See MPEP 2114, which states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647

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Claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Danly, 120 USPQ 528, 531

Apparatus claims cover what a device is, not what a device does. Hewlett-Packard Co. v Bausch & Lomb Inc., 15 USPQ2d 1525, 1528

As set forth in MPEP 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel L Greene Jr. whose telephone number is (703) 605-1210. The examiner can normally be reached on Mon-Fri 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J Carone can be reached on (703) 306-4198. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

19. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MICHAEL J. CARONE
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